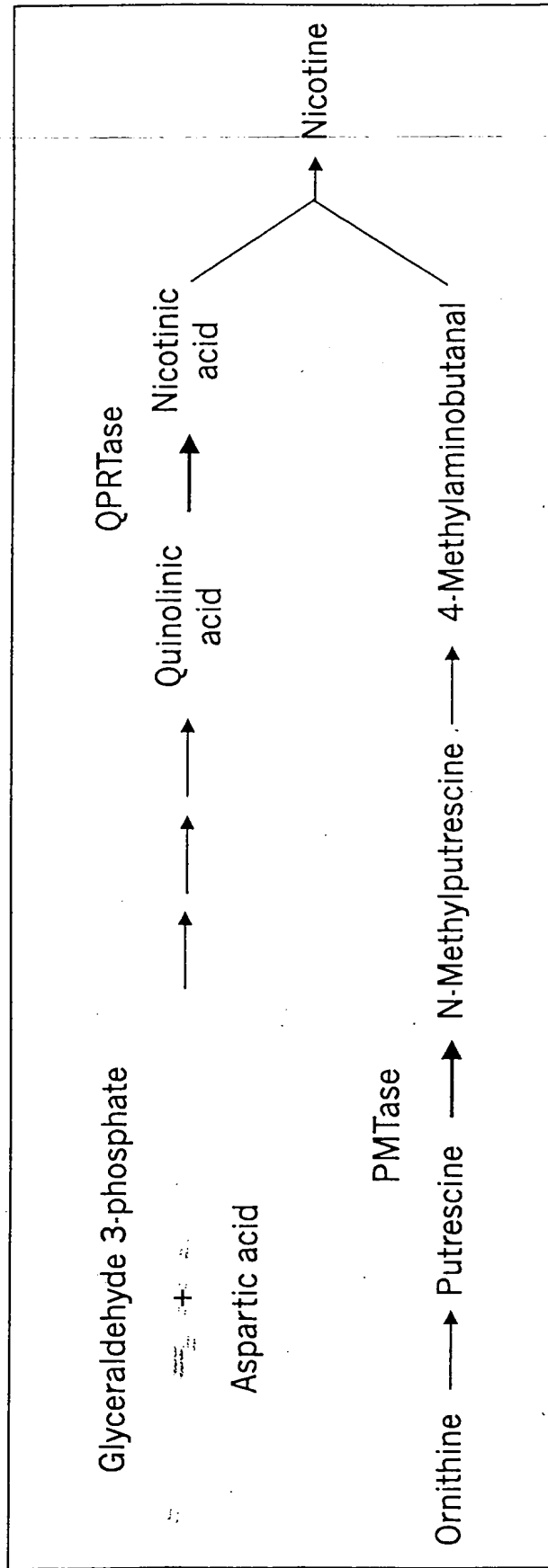


FIG. 1



caaaaactat tttccacaaa attcatttca caaccccccc aaaaaaaaac cATGTTTAGA 60
GCTATTCCTT TCACTGCTAC AGTGCATCCT TATGCAATTA CAGCTCCAAG GTTGGTGGTG 120
AAAATGTCAG CAATAGCCAC CAAGAATACA AGAGTGGAGT CATTAGAGGT GAAACCACCA 180
GCACACCCAA CTTATGATTT AAAGGAAGTT ATGAAACTTG CACTCTCTGA AGATGCTGGG 240
TTTCTAGCAA AGGAAGACGG GATCATAGCA GGAATTGCAC TTGCTGAGAT GATATTCGCG 360
GAAGTTGATC CTTCAATAAA GGTGGAGTGG TATGTAAATG ATGGCGATAA AGTTCATAAA 420
GGCTTGAAAT TTGGCAAAGT ACAAGGAAAC GCTTACAACA TTGTTATAGC TGAGAGGGTT 480
GTTCTCAATT TTATGCAAAG AATGAGTGGG ATAGCTACAC TAACTAAGGA AATGGCAGAT 540
GCTGCACACC CTGCTTACAT CTTGGAGACT AGGAAAACTG CTCCTGGATT ACGTTTGGTG 600
GATAAATGGG CGGTATTGAT CGGTGGGGGG AAGAATCACA GAATGGGCTT ATTTGATATG 660
GTAATGATAA AAGACAATCA CATATCTGCT GCTGGAGGTG TCGGCAAAGC TCTAAAATCT 720
GTGGATCAGT ATTTGGAGCA AAATAAACTT CAAATAGGGG TTGAGGTTGA AACCAGGACA 780
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ATAATGCTGG ACAATATGGT TGTCCATTA TCTAACGGAG ATATTGATGT ATCCATGCTT 900
AAGGAGGCTG TAGAATTGAT CAATGGGAGG TTTGATACGG AGGCTTCAGG AAATGTTACC 960
CTTGAAACAG TACACAAGAT TGGACAACT GGTGTTACCT ACATTTCTAG TGGTGCCCTG 1020
ACGCATTCCG TGAAAGCACT TGACATTTCC CTGAAGATCG ATACAGAGCT CGCCCTTGAA 1080
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tccttcactg tgtaatcaaa caaaaagatg taaattgctg gaatatctca gatggctctt 1260
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atgtgttaca atgaaaatac ttgatttata agtttggtgt atgtaaaatt ctgtgttact 1380
tcaaatattt tgagatggt 1399

FIGURE 2A

MFRAIPFTAT VHPYAITAPR LVVKMSAIAT KNTRVESLEV KPPAHPTYDL 50
KEVMKLALSE DAGNLGDVTC KATIPLDMES DAHFLAKEDG IIAGIALAEM 100
IFAEVDPSLK VEYVNDGDK VHKGLKFGKV QGNAYNIVIA ERVVLNFMQR 150
MSGIATLTKE MADAAHPAYI LETRKTAPGL RLVDKWAVLI GGGKNHRMGL 200
FDMVMIKDNH ISAAGGVGKA LKSVDQYLEQ NKLQIGVEVE TRTIEEVREV 250
LDYASQTKTS LTRIMLDNMV VPLSNGDIDV SMLKEAVELI NGRFDTEASG 300
NVTLETVHKI GQTGVTYISS GALTHSVKAL DISLKIDTEL ALEVGRRTKR 350
A 351

FIGURE 2B

N. tabacum	MFRAIPFTATVHPYAITAPRLVVKMSAIATKNTRVESLEVKPPAHPTYDL
R. rubrum	*-----RPNH-----PVAALS*F----AI
M. leprae	*-----LSDC-----EFDAAR-----
S. typhimurium	*-----PPRR*NPDDR*-----DALL*RINLDI*A----AV
E. coli	*-----PPRR*NPOTR*-----DELL*RINLDI*G----AV
H. sapien	*-----D*EG*ALLLPPVTLAALVDSWLREDC*G-----
S. cerevisiae	*-----PVYE-HLLPVNGAWRQDVTNWLSEDV*S-----

N. tabacum	KEVMKLALSEDAGNLGDVTCKATIPLDMESDAHFLAKEDGIIAGIA----
R. rubrum	D*AVRR**A**L*RA**I*ST****AATRAH*RFV*RQP**L**LGCA--
M. leprae	-DTIRR**H**LRYGL*I*TQ**V*AGTVVTGSMVPR*P*VIAGVDVALL
S. typhimurium	AQALREDLGGEVDAGN*I*AQL-L*A*TQAH*TVITR*D*VF----CGKR
E. coli	AQALREDLGGTVDANN*I*A*L-L*ENSR*H*TVITR*N*VF----CGKR
H. sapien	-----LNYAALVSGAGP*QAALWAKSP*VL----AGQP
S. cerevisiae	-----FDFGGYVVGSDLKEANLYCKQD*ML----CGVP

N. tabacum	-LAEMIFAEVPSLKVEWYVNDGDKVHKGLK-----FGKVQGNAYNIVI
R. rubrum	--RSAF-ALLDDTVFTTTPLE**AEIAA*QT-----VAE*A*A*RT*LA
M. leprae	VLD*VF-GVDGYRVLY--R*E**ARLQS*QP-----LLTVQAA*RGLLT
S. typhimurium	WVE*VFIQLAGDDVRLT*H*D***AI*ANQT-----VFELN*PARVLLT
E. coli	WVE*VFIQLAGDDVTII*H*D***VINANQS-----LFELE*PSRVLLT
H. sapien	FFDAIFTQL---NCQVS*FLPE*S*LVPVAR-----VAEVR*P*HDL
S. cerevisiae	FAW*VFNQ---ELQVE*LFKE*SFLEPSKNDSGKIVVAKIT*P*K**LL

N. tabacum	AERVVLNFMQRMMSGIATLTKEAD--AAH--PAYILETRKTAPGLRLVDK
R. rubrum	***TA***LGHL*****R*RRFG*AI*HT--R*RLTC****T****GLE*
M. leprae	***TM***VCHM*****V*VAWV*AVRGT--K*KIRD****L****ALQ*
S. typhimurium	G**TA***V*TL**VASEVRRYVGLL*GT--QTQL*D****L****TAL*
E. coli	G*PTA***V*TL**VASKVRHYVELLEGT--NTQL*D****L****SAL*
H. sapien	G***A**TLARC*****SAAAAVEAARGAGWTGHVAG*****T**F***E*
S. cerevisiae	***TA**ILSRS*****TASHKIIISLARSTGYKGTIAG*****T****RLE*

N. tabacum	WAVLIGGGKNHRMGLFDMVMIKDNHISAAGGVGKALKSVDOYLEQNKLQI
R. rubrum	Y**RC***S***F**D*A*L*****AVA***SA**SRAR-AGVGHMVRI
M. leprae	Y**RV***V***L**G*TAL*****VA*V*S*VD**RA*R-AAPEL-PC
S. typhimurium	Y***C***A***L**T*AFL*****I*S*S*RQ*VEKAF-W*HPD-APV
E. coli	Y***C***A***L**S*AFL*****I*S*S*RQ*VEKAS-W*HPD-APV
H. sapien	YGL*V**AAS**YD*GGLVML*D**VPP***EK*VRAARQ---AADFAL
S. cerevisiae	YSM*V**CDT**YD*SS**ML*D***W*T*SITN*V*NARA---VCGFAV

FIGURE 3

N. tabacum GVEVETRTIEEVREVL DYASQTKTSLTRIMLDNMVPLSNGDIDVSMLKE
R. rubrum EI*****-L*QLA***AVGGAEV-----VL****-DAPT-----*TR
M. leprae E*****S--L*QLDAM*A-EEPEL-----*L***F--*VWQTQV----AVQ
S. typhimurium E*****N--LDELDDA*K-*GADI-----*****F-----NTDQ----MR*
E. coli E*****N--L**LD*A*K-*GADI-----*****F-----ETEQ----MR*
H. sapien K*****CSSLQ**VQAAE-*GADL-----VL***F-----KPEELHPTAT
S. cerevisiae KI***CLSED*AT*AIE-*GADV-----*****F-----KGDGLK*CAQ

N. tabacum AVELI---NGRFDTEASGNVTLETVHKIG-QTGVITYISSGALTHSVKALD
R. rubrum **DMV---A**LV*****G*S*D*IAALA-ES**D***V*****TT**
M. leprae RRDIR---APTVLL*S**GLS**NAAIYA-G***DYLAV*****RI**
S. typhimurium **KRV---**QARL*V*****AE*LREFA-E***DF**VG*****R***
E. coli **KRT---**KALL*V*****DK*LREFA-E***DF**V*****Q***
H. sapien *LKAQFPSVA--VEA**GIT*DNLPQF-CGPHIDV**M**M**QA*P***
S. cerevisiae SLKNKWNGKKHFLLEC**GLN*DNLEEYLCD-DIDIY*TSSIHQGTPVI*

		<u>% Identity</u>	<u>% Similarity</u>
N. tabacum	ISKLIDTELALEVGRRTKRA		
R. rubrum	*G*D*VVA-----PPKAERA	15.9	43.2
M. leprae	*G*DL	18.3	37.3
S. typhimurium	LSMRFC	18.2	34.8
E. coli	LSMRFR	17.9	32.8
H. sapien	F***L---F*K*VAPVP*IH	16.8	31.7
S. cerevisiae	F***LAH	14.6	27.8

FIGURE 3 continued

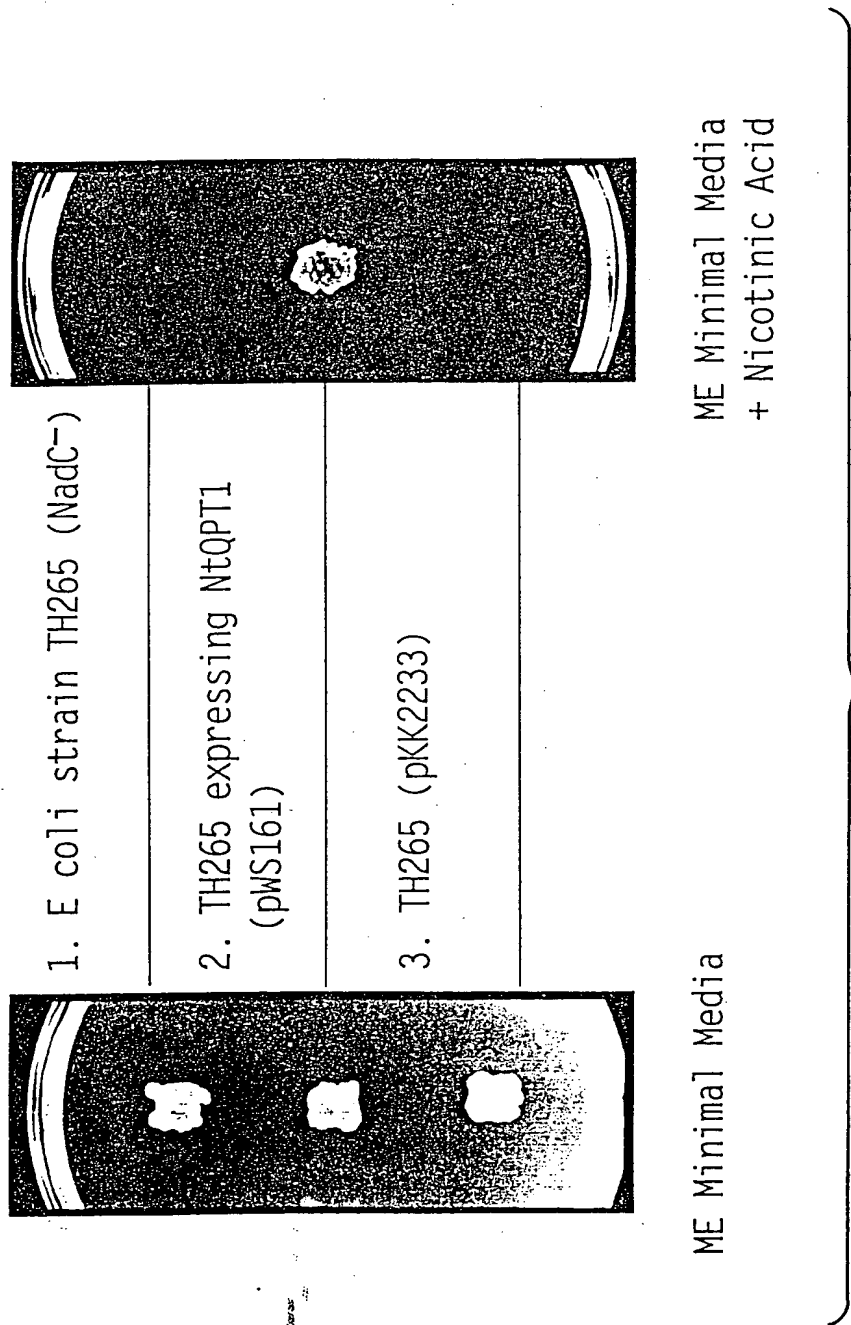


FIG.4

FIG. 5

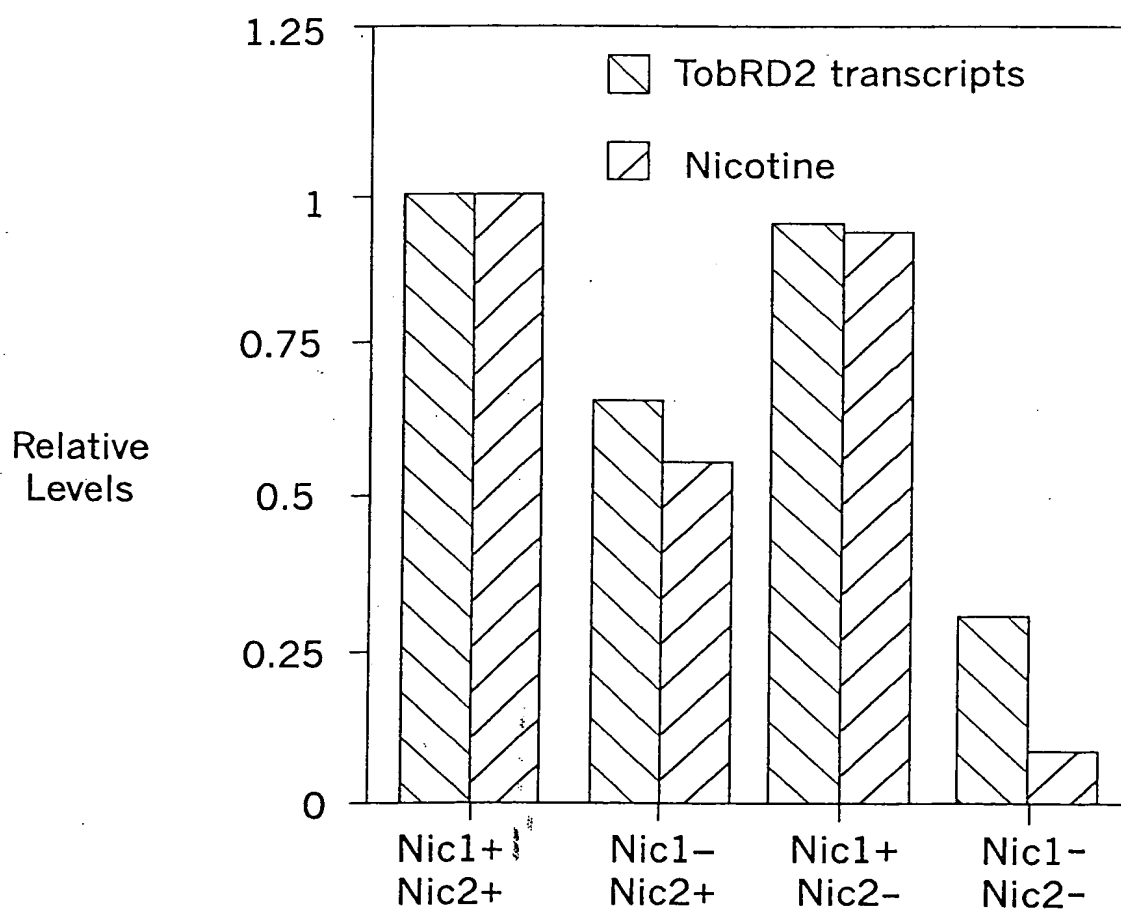


FIG. 6

